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ORIGINAL ARTICLES.

THREE VALUABLE SUTURES IN THE OPERATION FOR ADVANCEMENT.*

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In the operation for advancement of the extrinsic muscles of the eye, success will readily change to failure should the suture, or sutures, become loosened, or of themselves untie in the course of healing. The possibility of such an accident has accustomed me to add two sutures to those ordinarily employed, and lately I have added a third, which is probably more important, and may even take the place of the two heretofore employed. The purpose of these extra sutures is both to fix the muscle at its original point of attachment to the globe, above, below and at the center, and also to close the conjunctival wound. In the operation preferred by me five other sutures are used, and the eight may be separated into three groups, corresponding to the service which each group performs, as follows: three advancement, two supporting, and three fixing sutures, all doubly armed. The fixing and the advancement sutures are of fine black silk, preferably No. 1, and the needles size 22 or smaller, half curved and very sharp. The supporting sutures are of No. 6 black silk, threaded into as fine sharp half-curved needles as will easily carry it. All the sutures are tied on the conjunctival surface.

In the performance of the operation the conjunctiva is divided vertically over the insertion of the tendon to the globe, taking the internal rectus as an example, for a distance of from seven to

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ten millimeters, or sufficiently to expose the tendon, and the tendon is elevated from the globe by means of a strabismus hook with as little trauma as possible. The three fixing sutures are then placed, one at the upper margin at the point of the tendinous insertion, one at the lower margin, and the third

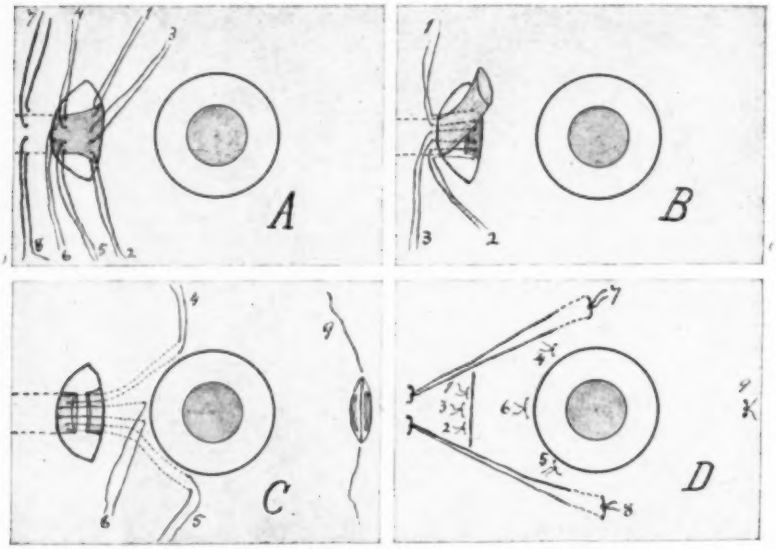

Fig. 1.—Three valuable sutures in the operation for advancement, represented by 1, 2 and 3.

A—Illustrates the conjunctival incision and the first insertion of all the sutures.

B—Illustrates the muscle divided and drawn forward, and the second insertion of the fixing sutures 1, 2 and 3.

C—Illustrates the proximal conjunctiva undermined and the second insertion of the advancement sutures 4, 5 and 6. Also the division of the opposing muscle and the placing of suture 9.

D—Illustrates the second insertion of the supporting sutures 7 and 8, the closure of the conjunctival wounds and the position of each of the sutures after it has been tied.

through the center. In the accompanying diagrams (Fig. 1, A, B and C) these are shown by the numbers 1, 2 and 3. On the distal, or muscle side of the hook the three advancement sutures are then introduced, one quilted in the upper margin of the muscle, one in the lower margin, and the third at the center a little back of these. These three sutures are represented by the numbers 4, 5 and 6 in the diagrams. The two supporting sutures, numbers 7 and 8 in the diagrams, are then introduced near the caruncle from the conjunctival surface in such a way as to involve the conjunctiva and the muscle, great care being exercised

to not include the sclera, one in the upper and the other in the lower margin of the muscle, and a single loose tie is taken in each.

When the sutures have all been placed, the distal end of the exposed muscle is grasped by an advancement forceps, and the tendon is divided between the advancement and the fixing sets of sutures. The globe is then brought into position by fixation forceps applied to the conjunctiva on the opposite side of the cornea, and the point is determined in the distal end of the divided muscle that will be opposite to the fixing sutures 1, 2 and 3, when the defect is corrected, or a little over corrected. The two needles of suture 3 are then thrust through the muscle from behind at this point, one a little above the other a little below the center of the muscle, and both are brought out through the distal conjunctiva. In a similar manner sutures 1 and 2 are placed, as shown in diagram B, Fig. 1, one at the upper and the other at the lower margin of the muscle.

The proximal conjunctiva, or that toward the cornea, is then undermined and the needles of the advancement sutures, 4, 5 and 6, are thrust beneath it forward to near the corneal margin in such a way as to get a hold in the scleral or episcleral tissue if possible, and they are brought out on the conjunctival surface, those of 4 at the upper forty-five to sixty degrees above the horizontal meridian, those of 5 the same distance below, and those of 6, the one just above and the other just below the horizontal meridian, as shown in Fig. 1, Diagram C. The tendon of the opposing muscle is then divided, and by the tying of suture 6 the globe is brought into the position desired. If the effect is not sufficient a second suture placed further back in the muscle should be substituted for it, or it should be removed and reintroduced further back. There should be moderate over-correction. Sutures 4 and 5 are then tied, and in tying them care should be exercised not to twist the globe by having an unequal pull on the one or the other.

The needles of the supporting sutures, 7 and 8, are now passed through the tendinous insertions of the superior and the inferior oblique muscles, sufficiently far from the corneal margin as to not involve the cornea after tying them. From where they are tied near the caruncle they pass forward on the conjunctival surface to where they are entered through the tendons. When tied they should add a little to the over-correction already obtained by the advancement sutures. Their location is shown in Fig. 1,

Diagram D. The operation is completed by tying suture 9 for closing the opposite wound and the tying of sutures 3, 1 and 2, the center one first to assist in maintaining the globe in its proper position, and none of them should be drawn so tight as to strangle the circulation. Unless some cause for their removal arises, all of the sutures should remain in place seven to ten days. The eye should be inspected daily, and I prefer that the bandage be worn until the sutures are removed. In the meantime the personal suggestion of Dr. Joseph W. Charles, that a Ring mask with a hole in it be worn over the fellow eye in order to give only central telescopic vision, as employed by him, is of excellent practical value for keeping the muscles at rest during the healing process.

Previous to the operation the usual precaution should be exercised of taking cultures and properly cleansing the conjunctival sac.

In the majority of cases the excision of a piece of the muscle is not necessary, nor is it necessary to remove any of the conjunctiva. Division of the opposing muscle is always advisable in high grades of deformity. I prefer a small vertical incision (Fig. 1, C) closed by a suture placed vertically in order to gain as much as possible for the weaker side.

The lack of freedom in the movement of the globe as a result of the re-attachment of the muscle at its original insertion has not become evident in the cases that I have been able to follow. On the contrary, I have seemed to obtain practically normal action in the advanced muscle without prejudice to the other muscles, except the natural loss of complete action in the divided opposing muscle as a result of the tenotomy. For a few weeks, or even months, there may be a redundancy of tissue in the region of the operation. This gradually disappears.

"SUBHYALOID HÆMORRHAGE."

(With report of a bilateral case due to trauma.)

By Wm. F. Hardy, M.D.,
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Most of the latter day writers on intraocular hæmorrhage refer to the type known as subhyaloid, as "so-called subhyaloid hæmorrhage." The point is well taken, for not only is the extravasation of blood from a retinal vessel, but it is in the large majority of instances beneath the limitans interna. J. Herbert Fisher urges the abandonment of the term "subhyaloid hæmorrhage" as the hæmorrhage is intraretinal. He suggests the words "semi-lunar retinal hæmorrhage."

The site of predilection at the macula is best explained by a less firm apposition of the hyaloid body to the retina at this point than at others; consequently the overlying limitans interna and hyaloid membrane are more easily raised up at this part. Guzmann contends that there is, however, but one membrane between the retina and vitreus, namely the membrana limitans interna. Gravity explains the half circle shape of the hæmorrhage with a straight horizontal border above and curved border below. The typical subhyaloid hæmorrhage is a relatively rare occurrence. A majority arises spontaneously, a few are the result of trauma. In either case the condition is as a rule unilateral. A bilateral subhyaloid hæmorrhage due to trauma must be exceedingly rare. In describing the spontaneous variety of subhyaloid hæmorrhage, most observers give particular prominence and attention to tuberculosis as a possible ætiological factor. This is particularly true of those recurring hæmorrhages which are more properly designated as vitreus ones. It is customary for those entering into the discussion of subhyaloid hæmorrhage to confuse it with vitreus hæmorrhage and to use the terms interchangeably. It is granted that a subhyaloid hæmorrhage may break through the limitans interna and become a vitreus hæmorrhage. But does a vitreus hæmorrhage always arise primarily from a subhyaloidal hæmorrhage? Most probably not. It is not my intention to enter into a discussion of vitreus hæmorrhages or the causes leading thereto, as this phase of the subject has been carefully considered by Hiram Woods, of Baltimore (*Jour. Am. Med. Ass'n*, 1912, Vol. LVII, p. 375). Dr. Woods' paper concerned subhyaloid and vitreous hæmor-

rhages. Dr. Adolf Alt, in discussing Woods' paper, noted that Woods made the statement that these hæmorrhages came from the ciliary veins, whereas in Alt's cases it came from a retinal artery. Alt stated that in most cases the hæmorrhage comes from the retinal vessels and not from the choroidal or ciliary vessels. This is the view now held by most authorities. It has been substantiated by histological examinations. Komoto is of the opinion that the extravasation, in the majority of the cases, of so-called subhyaloid hæmorrhage, is really intraretinal, and that only in unusual cases where the papilla is included in the extent of the hæmorrhage is the situation actually subhyaloid. In a paper entitled, "Discussion on Intraocular Hæmorrhage and Systemic Disease," Hill Griffith (*British Med. Jour.*, November 12, 1904, p. 1291), tabulates, among other varieties of intraocular hæmorrhage, fourteen cases of so-called subhyaloid hæmorrhage. In all but one case the hæmorrhage occurred at the macula, but the exception was a very marked case of large circular hæmorrhage at the nasal side of and slightly overlapping the disc. In one of his cases the hæmorrhage burst into the vitreus filling it with blood and destroying the sight. In nearly all the cases complete restoration of sight took place. Griffith remarked that the prognosis both as to sight and life is much better than in any other form of spontaneous intraocular hæmorrhage. In discussing Griffith's paper Prof. Uthoff referred to the case described at length by Ischreyt. The preparation and drawing of the same show how the large flat coherent hæmorrhage lies not before and upon the retina but close under the membrana limitans interna, and consequently really pertains to the retina itself. Guzmann described two cases (*Klin. Monatsb. f. Aug.*, November, 1912, S. 575), one observed ophthalmoscopically which he took to be a true subhyaloid hæmorrhage, i.e., one situated anterior to the limitans interna. The cut accompanying the article depicts a hæmorrhage resembling little in shape the usual picture of a subhyaloid hæmorrhage. His second case was seen only histologically. In this instance the hæmorrhage was situated behind the limitans interna. Guzmann gives Fisher (*Royal London Oph. Hosp. Reports,* Vol. XIV, 2, 1896) credit for having made the first histological examination of this condition. Later Benedek and Harms also made anatomical investigations. Harms (*Klin. Monatsb. f. Aug.*, 1912, S. 106) collected thirty-six cases, nine of which came to anatomical examination. He concludes that

the differentiation into two anatomically separable forms, the so-called marginal (Elschnig) and the true subhyaloid form is not with certainty possible. Fisher (*Proceedings of the Royal Soc. of Medicine,* December, 1912) considers that these hæmorrhages are of venous origin. He described a case which he thought tended to prove his contention. An obstruction in the central vein was considered the provocative factor. Whether this explanation is satisfactory or not is open to question.

W. B. I. Pollock (*Brit. Med. Jour.,* 1912, p. 1035) reported a case of spontaneous subhyaloid hæmorrhage. He states that the common (?) form of intraocular hæmorrhage is that known as subhyaloid. It is said to be rare in women. Pollock says that the hæmorrhages are nearly always situated at the macula and are generally of a hemispherical shape, usually with the superior margin delimited by a horizontal line. He also says that it is rare to find a second hæmmorhage at another part of the fundus. A fresh hæmorrhage may be superimposed on the first. Pigment is usually observed in the retina after the hæmorrhage is absorbed.

To the writer the theory of Fisher, that an obstruction in the central vein is at the bottom of the trouble, does not fit in well with the observation that other hæmorrhages are absent throughout the retina.

Pollock states that the vitreus often shrinks from the fovea during hardening of the eyeball, which suggests that the greater frequency of hæmorrhages at the macula is due to the apparently slender attachment of the hyaloid membrane in this area. This is similar to the explanation given by Fuchs for the accumulation of the blood in the macular region.

H. W. Woodruff (*Ophthalmic Record,* 1912, p. 287) reported a case in a man of thirty-eight suddenly stricken blind in the right eye while shaving. The ophthalmoscope showed a large hæmorrhage, circular in outline, and with well defined edges except at the temporal margin, and occupying the macular region. There was no lues or disease of the vascular system. Urinalysis and tuberculin tests negative. Woodruff cites Hotz as having observed but three cases in twenty years of practice. All recovered normal vision. One was ascribed to menstrual disorder, another to cough, and the third could not be explained. One patient died from apoplexy one year later. Dr. Faith, in commenting on Woodruff's case, cited the case of a man injured in one eye and had what at first was considered a subhyaloid hæm-

orrhage. The patient had an absolute blind spot, but after several weeks the shape of the hæmorrhage did not change by gravity. After a month the hæmorrhage began to absorb around the margins and later there appeared a dark outline in the choroid. This case proved to be a rupture of the choroid with a tear across one of the large veins.

Trauma is rarely mentioned as the exciting cause of subhyaloid hæmorrhage.

In reporting the following case of bilateral traumatic subhyaloid hæmorrhage, I feel that its great rarity justifies its recital.

A young colored prize fighter, aged 23 years, bearing the sobriquet of Unknown Kid, engaged in a prize fight the latter part of January, 1915. He was muscular, strong and in apparent excellent health. His last engagement resulted in a "knockout" —for him. He was struck in the region of the left eye and fell into a semi-prone position, striking his head on the floor. He was unconscious for a time and on recovering found his vision was very bad in both eyes. When seen at the Eye Department of the Washington University Medical School three weeks later, V=20/240 R. and L. The external appearance of the eyes was normal. Pupils were dilated with homatropine. A large subhyaloid hæmorrhage was seen in each eye, about equal in size and extending two disc diameters to either side of the approximate foveal location. The hæmorhages reached therefore nearly to the discs. The shape was typical and the straight horizontal upper border extended just to the height of the fovea. In the right eye between the mass of blood and the disc were a few small splotches of blood, otherwise no other areas of hæmorrhage were seen. The remainder of the fundus in each eye appeared perfectly normal. The retinal vessels appeared to stop abruptly at the sharply demarkated edge of the hæmorrhage, being hidden in their further course. No medication was given. The hæmorrhages slowly absorbed, and when last seen the latter part of March, were considerably smaller, V=20/75 either eye. No tear in the choroid was made out. He was given a fairly good prognosis.

The spontaneous hæmorrhages are more frequently seen, and in these cases some general disease or dyscrasia is generally suspected to be the cause. It is curious that in 1912 there was about as much contributed to the literature on this subject as in the preceding twenty years.

COMPLETE LEFT HEMIANOPSIA WITH GLYCOSURIA RESULT OF SLIGHT TRAUMA.*

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Mr. J., aet. 66, who was referred to me by Dr. L. C. Stocking, his family physician, gave the following history:

While walking on the street the latter part of August, 1914, he slipped and temporarily lost his balance. By a strong muscular action he regained his equilibrium. When he reached his office, which was only a short distance away, he sat down to make out some papers which he did with some difficulty. Very shortly he had occasion to cross the room and in so doing stumbled over some one who was on his left side. This followed almost immediately after reaching his office.

Examination of the patient showed a well preserved man with normal heart and lung action and with a blood pressure of 150. Excretory and secretory organs apparently functionating normally. Normal gait and posture, except slight inclination to turn the head to the left. Reflexes normal, appetite and sleep also as usual; no deviation of the tongue on protrusion, cheeks inflated normally, equal strength on both sides of the body.

Report from Dr. Stocking who had examined the urine a few days prior to this time showed normal urine, no albumin, no sugar, no casts. Two or three tests which had been made in the weeks immediately preceding this injury showed a complete absence of sugar. Examination a few days later showed large quantities of sugar, which has persisted but in lessened quantity since then. The quantity of the urine has not noticeably increased. Blood pressure still remains at 150.

Visual acuity, right and left eye 20/12 promptly, no ametropia. Presbyopia was corrected by a +3.00 diopter lens. Muscle balance, reflexes and fundus absolutely normal. Fields, both right and left, showed left lateral hemianopsia complete for both form and color, with retention of the central field of about ten degrees. No central color scotoma, the right sides of the fields are normal. There was no hemiplegia, no anæsthesia, no aphasia and no ataxia. A lesion confined to the cuneus, or to the gray matter immediately surrounding it on the mesial surface of the occipital lobes, produces homonymous lateral hemianopsia without motor

*Read at the December 2, 1914, meeting of the Ophthalmic Section of the St. Louis Medical Society.

or sensory symptoms, at least without these as a direct consequence of the lesion. If the lesion produced a hemiplegia, hemianæsthesia and lateral hemiplegia the trouble would probably be situated in the posterior portion of the internal capsule. If the preserved fields are accompanied by concentric contraction, the smaller half field will be in the eye opposite to the lesion; contraction of the preserved half field is most common with lesions of the cortex, but also may occur in lesions of the tractus.

If the hemianopsia is relative, the lesion must be in the cortex; elsewhere it produces absolute hemianopsia, but cortical lesions are not excluded by absolute hemianopsia. A lesion producing typical hemiplegia, aphasia (if the right side is paralyzed), little or no anæsthesia and lateral hemianopsia, is probably due to disease in the area supplied by the middle cerebral artery. A lesion causing ataxic movements of one half of the body, no distinct hemiplegia, and lateral hemianopsia could be situated in the posterior lateral part of the optic thalamus. A lesion causing symptoms of disease of the base of the brain, associated at the same time with changes of the pupil, changes in the nerve head and lateral hemianopsia, could be situated in one optic tract or in the primary optic centers on one side. The above is from Seguin's rules for the diagnosis of the seat of the lesion of cases of hemianopsia.

Galezowski has described a peculiar form of retinitis in diabetes, retinal hæmorrhage and palsies of the muscles of the eyeball have also been noticed. Attention has also been directed to diabetic hypermetropia, and with the change of refraction a quantity of sugar is observed, according to Landolt. We can produce diabetes in an animal by irritating the floor of the fourth ventricle as originally done by Claude Bernard. There are also other parts of the nervous system from the cerebellum down to the point of emergence of the sympathetic system to the viscera, the irritation of which will produce, though less promptly, diabetes.

Landois and Stirling say that a continued irritation or stimulation of peripheral nerves may act reflexly upon the center for the vaso-motor nerves of the liver. Diabetes has been observed to occur after stimulation of the central end of the vagus and also after stimulation of the central end of the depressor nerve. Neuritis of the vagus, produced by injections of lycopodium or of croton oil into the nerve trunk, or by the action of a ligature, has been followed by glycosuria which may last with in-

termissions for a month. Even section and subsequent stimulation of the central end of the sciatic nerve causes glycosuria. This may explain the presence of glycosuria in those suffering from sciatica. It may occur also after perverted nervous activity, as psychical excitement, neuralgias, (sciatic, trigeminal or occipital), concussion of the brain, as well as after certain injuries to the skull and vertebral column and some cerebral diseases.

In this case we have the complete lateral hemianopsia with the presence of sugar in the urine as a complication, as a result of what seemed an apparently trivial incident. Guided by the suggestions as laid down by Seguin, I have made the diagnosis of a ruptured blood vessel on the mesial side of the occipital lobe in the region of the cuneus.

Up to the present time (two months) there has been no change in the hemianopsia, but the sugar has been lessened. The inconvenience of the loss of the visual field to the left has been in part overcome by the patient learning to turn the head a trifle, and in this way overcome the annoyance. Differentiation should be made between glycosuria and diabetes.

THE OPERATIVE TREATMENT OF CHRONIC DACRYOCYSTITIS.*

(Case Report, Presentation of Patient and Specimen.)

By C. W. Tooker, M.D.,
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Chronic dacryocystitis, with its attendant dangers of abscess and fistula developments and with its continuous menace to corneal integrity, has been the subject of much discussion during many years. The text books of the last twenty years are rather uniformly of the opinion that the condition is difficult to remedy. The tedious, painful dilatations extending over many months are not productive of good results in a large proportion of cases. Fuchs, in 1906, states: "Recurrences (after many weeks of probing) may set in owing to the contraction of cicatricial tissue, and, in fact, this occurs so often that permanent cures form the exception."

*Read at the January 6, 1915, meeting of the Ophthalmic Section of the St. Louis Medical Society.

De Schweinitz, in 1896, stated, "The well known fact that under the the most skillful treatment affections of the tear passages often resist healing, renders a guarded prognosis necessary."

As for radical methods, not much encouragement is offered by the older writers. Nettleship, in 1890, very briefly advises obliteration of the sac as a last resort. Swansy, in 1894, speaks of obliteration with cautery, and dissection of the sac as of doubtful efficacy. Noyes, in 1894, describes the closing of the wound by granulation tissue in two or three weeks after incision and cautery, stating that such treatment does not give uniformly good results. Fick, in 1894, mentions that obliteration of the sac by various means is a classical method and remarks that Arlt had abandoned the method of extirpation after several attempts. On the other hand, he is not optimistic in his description of treatment by periodic dilatation.

Ophthalmic literature of the last five years is replete with reports and investigations concerning the pathology and treatment of dacryocystitis. The opinion seems to be prevalent at present that radical measures are usually necessary.

Bradburne[1] believes that "these instruments (probes), except under special circumstances, should never be employed—probing can scarcely fail to cause serious damage, and reparative fibrous tissue sooner or later organizes." He quotes Hirschberg to a similar effect. Such an opinion is probably as much too radical as earlier methods of treatment were too conservative. Many methods of treatment have been advocated. Wessely[2] speaks favorably of the treatment of chronic dacryocystitis with iodin, a method used by C. M. Cobb[3] in a case reported by him. F. Cohn[4] recommends the use of fibrolysin in tear sac disease. A more radical procedure is that advocated by Peterson,[5] who reports good results in a series of cases in which the tear passage was opened by a special stricture knife.

The Toti operation of establishing a permanent wide communication between the sac and the nose by cutting a large opening in the wall between the tear sac and the nose has many advocates. D. L. Davies[6] considers it the best method of treating chronic dacryocystitis and believes that the radical extirpation of the sac is suitable in a limited number of cases only. It is rather difficult, however, to understand the advantage of leaving a non-functionating, diseased mucous membrane in the canal with the continued probability of further trouble, when we are almost certain of eliminating the disease by more radical measures.

T. H. Butler[7] declares that the Toti operation is very dificult and that the results are not better than those following extirpation. Standish,[8] while believing that many cases can be cured by persistently treating the sac with antiseptics over a period of many months, states that the trend of opinion to-day is in favor of extirpation. The experiments of Lancaster demonstrated that extirpation of the tear sac in guinea-pigs considerably reduced lacrimation of that eye. Elliot[7] reports a series of 900 cases of extirpation and remarks that the operation was practically invariably followed by diminution of the lacrimal secretion. The subject of diseases of the tear passages was discussed at the meeting of the British Medical Association in 1913, and many reports of successes in operative treatment recorded. In the 900 cases reported by Elliot and his assistants, 78 per cent of the sacs were removed entire. He is in favor of searing the passage after extirpation with a red hot cautery.

Butler, in discussing the papers presented there, is strongly of the opinion that styles are non-surgical and that perhaps only 5 per cent. of the cases are cured by probes. It would be unprofitable to multiply references as to the value of operative measures in this disease. The following case is reported rather to elicit discussion of the subject than for any other purpose. It possesses no unusual features, but illustrates what can be accomplished in such a distressing class of cases. It is seldom that our patients can be persuaded to give up their working time and undergo the repeated painful treatment required by the more conservative methods. Of course, the treatment of such cases in children differs considerably from that described above. Frequently, one thorough dilatation under ether anæsthesia will effect a cure, unless the condition is tuberculous.

Case report.—Mrs. B., aged 30, consulted me on October 31, 1914. For seven years her right eye has given her great annoyance. Tears "run over" her face from that eye and at frequent intervals the eye has "mattered" and her face has become swollen and painful on the right side. She has frequently had severe headaches and pain across her forehead. The glasses which she has been wearing for several years correct her ametropia. Her general health has been fair, although her resistance is below the average. An examination demonstrated considerable tenderness over the tear sac of the right eye and a chronic conjunctivitis. The puncta of the right eye were incised and several attempts made to dilate the tear duct. Puru-

lent accumulations could be washed from the tear sac through the puncta, but the lower end of the sac seemed either very stenotic or occluded. Fluid could not be forced through the duct into the nose, nor could a probe be passed through the duct at several trials.

She gave her consent to radical measures, and on November 6th I removed the tear sac under ether anæsthesia, after the method decribed by Meller. Primary union of the wound was effected on the fourth day. There have been no complications. At the present time, the scar is quite apparent, but after several months it should not be of much consequence. Her eye is occasionally filled with tears, but there has been no epiphora. Her pain and headaches have disappeared. It would, perhaps, be the part of wisdom to wait several months before declaring the condition remedied and the eye normal, but from every indication at present obtainable, her chronic purulent dacryocystitis has been cured.

As for the operative difficulties one encounters, it is well to state that a general anæsthetic is almost a necessity to one of limited experience in extirpating tear sacs. Despite the excellent diagrams and lucid explanations of the topography of the operation, the bleeding may be annoying and the dissection tedious, making work under cocain adrenalin anæsthesia extremely difficult. The entire sac must be removed, preferably intact, otherwise the operation is of no value at all. The accompanying specimen from this patient illustrates the appearance of a sac completely closed at its lower extremity, presenting at the upper end the openings of the canaliculi.

It seems to me that the radical operation for the cure of chronic dacryocystitis is logical and practical. It promises definite and permanent results if skillfully performed, and is preferable to painful, tedious treatments lasting many months.

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A CASE OF FRACTURE AT THE BASE OF THE SKULL, OCULAR SIGNS.*

(Presentation of Patient and Skiagraph.)

By C. W. Tooker, M.D.,
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The following case presents several points of interest and seems to merit a brief report. The usual ocular symptoms of fracture at the base of the skull, as described in the various textbooks, are profuse subconjunctival hæmorrhage and ecchymosis of the lower lid developing several days after the injury, and paralysis of the ocular muscles. The external rectus is most frequently involved. Early ophthalmoscopic examination reveals no change, but optic atrophy frequently supervenes.

Mr. S., age 22, was sent to our office October 8, 1914. Three weeks previous to that date, while in an automobile, he had been thrown against a post, violently striking his head. He was unconscious for a day and then noticed that he did not see as well with his right eye as he formerly did. This eye has given him some pain on several occasions since that time, but there has been no subconjunctival extravasation of blood.

An examination made by Dr. W. A. Shoemaker on October 8th revealed atrophy of the right optic nerve. V. O.D.=13/200, not improved by glasses. V. O.S=24/30. A diagnosis of fracture of the skull was made by Dr. Shoemaker. The skiagraph made several days later shows the lesion and corroborated the diagnosis.

During the last two months, the patient has been taking strychnia in full doses. His vision on December 19th was 13/40 in the right eye, not improved by glasses, and 24/30 in the left eye. The color fields in his right eye have been partially restored and there is no longer present a relative scotoma for white as determined on October 8th. There has been no change in the appearance of the optic disc. The explanation of the improvement in vision probably consists in the gradual absorption and shrinking of exudates accompanying the fracture. The effect of strychnia on nerve tissue must also be regarded as decidedly beneficial.

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ERYTHEMA MULTIFORME WITH CONJUNCTIVAL INVOLVEMENT.*

By Matty Lee C. Barnett, M.D.,
ST. LOUIS, MO.

The case which I present to-night, being of an unusual nature, I have been unable to find many references to it in ophthalmic literature, but have gathered the data I offer from Stelwagon on Diseases of the Skin and Sajou's Cyclopedia of Practical Medicine.

Mr. K., age 26, of Baldwin, Ill., came to me for the first time October 26th. He gave a history of frequent attacks of tonsilitis and rheumatism and two months ago had had typhoid fever. The first day he was able to resume his work on the farm he was struck by a bale of hay, suffering injury in the left inguinal region. This confined him in the hospital three weeks. He had been home three days when he felt intense burning in the eyes; they grew worse and he was unable to sleep that night. In the morning the lids were red, swollen and an eruption appeared upon the lower lids which extended over the margins up on the conjunctiva to the cornea. The second day a similar eruption made its appearance upon the neck and a few upon the dorsal surfaces of the arms; one appeared later on the mucous membrane of the mouth. The patches varied in size and contour, some as small as a dime, one as large as the palm of the hand. They increased in size for three days then remained stationary.

The patches were of annular shape, with a clear center. The base was very red, almost violaceous. Upon the maculæ were vesicles of rather uniform size. One lesion seemed to be formed of several rings which had coalesced, serpentine lines or bands resulting. From this the diagnosis of serpiginous syphilide was made by one physician who saw him in my office. There were no accompanying symptoms of irritation as itching, swelling of one or more joints or febrile disturbance. Except for the eyes he suffered no discomfort.

Being unfamiliar with the lesions, I referred him to Dr. J. J. Houwink, who diagnosed it "erythema multiforme," of a tubercular and bullous variety. I gave him iodide of potassium, fifteen grain doses t.i.d. and applied locally sodium sulphate ½ to 1 water. He improved rapidly and Tuesday, eight days after his first visit, he went back to his home.

*Read at the Ophthalmic Section, November 4, 1914, meeting St. Louis Medical Society.

The ætiology of this disease is obscure. Rheumatism, malaria, Bright's disease and digestive disturbances are given as predisposing causes. It occurs especially during the spring and autumnal seasons and Hutchinson regards it as a catarrhal disease, i.e., the same causes which produce catarrh in people with susceptible mucous membrane produce this disease in those with susceptible skins. The disease frequently recurs at regular intervals and all ages are affected. Certain drugs may influence an attack and the administration of potassium iodide must be judicious or it may aggravate the condition.

There may be much burning or itching, although these symptoms are usually wanting. Boric acid in saturated solution affords quick relief in these irritations. When due to a digestive disturbance saline laxatives, cod liver oil, phosphorus and at times strychnia are valuable in the tubercular forms. Stimulating remedies are often beneficial and ichthyol is mentioned as especially serviceable in the vesicular variety of the bullous type.

The prognosis is favorable, although Vidal and Lelou have reported several deaths from erythema multiforme. It has a tendency to disappear spontaneously in from two to four weeks, although relapses are common. In some cases relapses occur so frequently that it assumes a chronic aspect.

The papular variety, appearing usually upon the hands and forearms, is a most common form and a predilection is shown for the mucous membrane of the mouth, often making swallowing almost impossible, but the tubercular and bullous types are rare. Dr. Houwink remarked he had seen but few cases of this variety.

CONTRIBUTIONS TO THE MANNER IN WHICH TRAUMATIC AFFECTIONS OF THE MACULA OCCUR.*

By Dr. Olga Pálich-Szántó.
(From Prof. E. von Grosz' University Eye Clinic at Budapest.)

The alterations in the macula lutea, which result from a trauma have first been discussed in 1888 by Haab, at the meeting of the Heidelberg Ophthalmological Society. He and his pupils, Mayer, Siegfried and others, have collected numerous such cases.

The comparative frequency of such macular affection is due, according to Haab, to the greater vulnerability of this locality. Lehmann, however, ascribed an important role to the mechanical influences.

The affections of the macula are usually of a temporary character, in some cases however lasting changes, as pigmentation, atrophy and so on, take place which may render vision very poor. In recent cases the changes in the macula are sometimes very difficult to diagnosticate. The eye is usually more or less irritated, the refracting media are dim, the pupil is small, and in consequence the finer details of the fundus cannot be exactly seen. It is the more important, therefore, to observe the condition of the macula a little later. This is especially important on account of medicolegal questions when the statements of the patient and the objective examination do not harmonize and the patient might be thought to simulate. Aside from perforating injuries, that is in contusion of the eyeball, maculare changes are not even very rare. Siegfried has studied them with care. In his comprehensive work he deals with 167 cases. In 21 of these Berlin's dimness of the macula lutea was observed. In 16 of these the dimness disappeared quickly without consequences; in 5 it remained constant. In other 25 cases no Berlin dimness was seen in the macula lutea, probably because they were seen only a week or more later; it is therefore impossible to know whether right after the injury no Berlin dimness was visible, the more so, since in these cases, too, changes in the form of pigmentation and atrophic spots were found which quite often result from Berlin dimness. It is, however, not absolutely necessary that these macular changes were developed from a Berlin dimness; they may result, also, for instance, from a central detachment of the retina, if this was caused by a localized, small hæmorrhage. Among Siegfried's cases there were only three

*Klin. Monatsbl., Vol. LIV., p. 56.

with a hæmorrhage in the macula lutea, but it is not stated that in any of these cases the hæmorrhage caused a detachment of the retina with subsequent chorioretinitis. From this it is seen that a hæmorrhage in the macula lutea results only in a small number of cases. In these cases the trauma is always a very serious one like a shot, an explosion, a fall on the eye. In the cases later on described there was also an intense trauma. In the remaining 34 cases of Siegfried's the changes in the macula lutea were not caused by contusion and therefore do not interest us here.

Schmidt published 14 cases in which a contusion of the eyeball had caused macula lutea changes. These consisted of a grayish opacity of the retina and correspond with the commotio retinæ as described by Berlin. In every case the diagnosis was "retinitis traumatica," which is not quite correct, since pigmentation, exudation, connective tissue proliferation and hæmorrhage were absent. On the basis of a Berlin dimness a central retinitis may develop, as some of Siegfried's cases have shown; yet, the commotio retinæ is only an œdema of the retina—not an inflammation—as shown experimentally by Berlin.

As we see the Berlin dimness, and the eventually subsequently developed retinitis, is the macula affection most frequently due to contusion of the eyeball. Our knowledge of other changes is scant. Fridenberg has described a very peculiar picture after a contusion. There were in this case, fine white stripes running in a radiary direction from the macula lutea. Fridenberg thinks that these stripes represent œdematous, swelled and loosened nerve fibres, which have become sclerosed and have lost their transparency. He calls this fibrillar œdema, and compares it with the opacity and swelling of the lens which may appear after a blunt trauma in which the capsule is torn to an almost invisible extent, and the lens from the entering of aqueous humor swells up and becomes opaque. In the nerve fibres the permeating fluid is the serum from the capillaries of the retina and choroid, which diffuses into the retinal tissue on account of the vasomotor paralysis.

To the group of rare macular changes belongs, further, the traumatic formation of a hole in the macula, which has first been described by Haab. His observation has been repeatedly affirmed later by a number of similar ones.

I now wish to describe a case which on account of a very peculiar appearance in the macula lutea is worth to be related in detail.

On September 3rd, 1914, a wounded soldier was taken into the clinic whose history was the following:

T. J., 24 years old, was injured at the right arcus superciliaris by a shot. The eyeball had not been hit, yet vision had suddenly been reduced. The eye had not been treated, no drops had been instilled, only the wound in the eyebrow had been bandaged. Very soon afterwards the eye became red and inflamed.

Status præsens.—The left eye is normal. Right lids œdematous and swollen, the eye tears moderately; no great pain. Conjunctiva hyperæmic and swollen. On the eyeball conjunctival and ciliary injection. No perforating wound. Cornea smooth and shiny. Below at the iris root an iridodialysis of 3 mm. length. Anterior chamber deep; aqueous humor clear. The pupil is dilated by atropine, the refracting media are clear. A Roentgen plate shows no foreign body within the eyeball.

The fundus is easily visible. The optic papilla and its vessels show normal conditions.

At the macula lutea, forming about its lower limit, there is seen a curved thin strand of grayish green color, which downwards gives off three radiary branches. Fine point-like hæmorrhages in the fundus, especially downwards, V=5/30. Considerable concentric contraction of the field; absolute central scotoma.

On September 13th the macula affection has plainly progressed. Coming from the macula radiary strands spread out in all directions; they are a little higher than the level of the retina and look strangely green. There is nowhere any pigmentation.

On September 18th the picture of the macula is materially changed. The outlines of the strands are no longer sharply defined; their color is more yellowish than green.

On September 23d the outlines of the strands are still more indistinct; the parts lying between them are in consequence becoming less clear, so that the plainly visible, beautiful star figure seen on September 13th can hardly be recognized.

On October 1st the patient was discharged. There was at the macula lutea a yellow spot, not sharply defined, about the size of the papilla, in its circumference some pigmentation. His vision is unchanged, 5/30.

How can we explain this case? There are three possibilities. First, Berlin dimness. This is the least probable because neither do the radiary strands or folds nor the later course of this case correspond to the Berlin dimness picture.

We might, further, think of central retinal detachment, as described by Hoche, Schmidt-Rimpler and others. In the first four days of observation we might have been inclined to think of this, since the formations running in a radiary direction from the macula lutea had a decidedly green color, were more like folds than strands, and showed no fibrous structure in the direct image. Later on, however, the picture was changed in such a manner that it can under no circumstances be looked upon as a simple detachment. Signs of proliferation became more and more apparent and finally the picture resembled more a proliferating retinitis, so that we have to think of this possibility. Yet, our case differs from the typical and rare retinitis centralis traumatica.

Similar cases were reported by Wagenmann in Graefe-Saemisch, who states that a circumscribed detachment of the retina may occur at the macula lutea in consequence of a rupture of the choroid, which can only later on be recognized. This detachment may afterwards disappear, but considerable chorio-retinitic patches may persist. Our case must be looked upon as one of these rare cases of retinitis traumatica.

Scheibe, Vennemann and Schmidt-Rimpler have reported cases which are, perhaps, to a certain extent similar to ours. The manner in which a proliferating retinitis develops may be explained in the following way: In consequence of the trauma a hæmorrhage occurred between retina and choroid at the macula lutea, or into the deeper layers of the macula lutea—there were also hæmorrhages in other parts of the fundus—and by this hæmorrhage the overlying parts of the retina were lifted up in the shape of folds. Of course, the hæmorrhage could not be very large, or a flat detachment would have resulted, as we often see it. In the periphery of this hæmorrhage a connective tissue organization took place and finally a proliferating retinitis developed which totally changed the picture of the primary detachment.

A few words as to the three similar cases which I could find in literature. In Schmidt-Rimpler's case, as the result of a blunt injury, a circular detachment of the retina occurred about two papilla diameters in size. This detachment was most probably due to a hæmorrhage, because a rupture of the choroid could be seen close to the detachment. However, the only similarity of this case to ours lies in the detachment being a central one. The shape of it was quite different. Here there was the

usual flat detachment which looked unchanged ten days later; there is no mention of connective tissue newformation.

It seems, therefore, that a proliferating retinitis results only from a very small detachment and can cover the picture of this detachment perfectly.

In Vennemann's case a retinal detachment about the size of the papilla is described. In its place later on a typical chorioretinitis appeared. It took, however, ten months for this to develop. This shows that the larger the detachment the longer will be the time consumed in the development of the retinitis. For in our case, in which the hæmorrhage can have been only point-shaped, this change appeared after a few weeks, so to speak, before our eyes; in Schmidt-Rimpler's case, however, in which the detachment was twice the size of the papilla, no change at all was observed.

In the third case, the one described by Scheibe, there was, also, a contusion of the eyeball by a hard stroke on it. A detachment of the retina was found at the macula lutea and slightly upward from it. Its size is not mentioned. The grayish green appearance of the macula, the formation of folds and the behavior of the blood vessels make the diagnosis very probable. A month later the picture had changed considerably. In place of the detachment was a long white band surrounded by pigment granules.

Scheibe mentions the case but shortly, and does not try to explain the peculiar change in the macula lutea, but thinks the retina has simply become reattached, although from the newformation of connective tissue and the pigmentation one should assume that a chorioretinitis has arisen in the place of the former detachment.

CONCLUSION.

1. In consequence of contusion of the eyeball circumscribed hæmorrhages may occur at the macula lutea, either between retina and choroid or in the deeper layers of the retina.

2. These hæmorrhages may cause a retinal detachment which, as in our case, may consist only in the formation of some folds. Yet, in such a case the hæmorrhage must be so small that it can act only on one point of the retina.

3. By a connective tissue organization of the hæmorrhage the detachment is hidden altogether and a retinitis proliferans may develop.

4. The development of the retinitis proliferans varies in time, probably according to the size of the detachment, or rather of the hæmorrhage which brought about the detachment.

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THE USE OF DECANTED BLOOD SERUM IN HEMOPHILIA.

At times it is necessary for an ophthalmologist to operate upon a known hemophiliac. At other times a persistent bleeding or the loss of an eye awakens us to the fact that we are dealing with a bleeder. It may therefore be of interest to know of the simple procedure of Aspinwall Judd (*Medical Record,* April 17, 1915) who used decanted blood serum. His cases were in general surgury. The blood is drawn into a sterile glass vessel. A near relative is the donor. The blood is kept at a temperature of blood heat for a half hour and is then placed on ice, being protected from the air by cotton, until the clot separates from the blood. This takes from one to twelve hours. The serum is injected into the loose subcutaneous tissue of the back or abdoment with an ordinary glass or metal aspirating or other syringe. Blood yields 40 per cent of serum, i.e., 100 cc. of blood will furnish 40 cc. of serum. In one of Judd's patients whom decanted serum was used there has been no recurrence of any tendency to hemophilia more than three years after the operation. The blood picture and clotting time is normal and his hæmoglobin in more than 90 per cent.

Twenty to sixty or more cc. of serum may be injected at one time, to be repeated as often as is deemed necessary.

NOTICE.

EYE AND EAR SURGEONS OF THE PACIFIC COAST TO MEET IN EXPOSITION CONVENTION AT SAN FRANCISCO, JUNE 15-17.

The third annual convention of the Pacific Coast Oto-Ophthalmological Society will convene in San Francisco at the Civic Auditorium Tuesday, Wednesday and Thursday, June 15, 16 and 17, in connection with the Panama-Pacific International Exposition. Several hundred members of the organization, which is composed of the leading eye and ear surgeons of the Pacific Coast, will attend the three days sessions for the discussion of new methods in the treatment of eye diseases. Papers dealing with these subjects in great variety will be read by noted physicians and surgeons from many of the large eastern and middle-western cities in addition to papers by coast experts.

The medical fraternity of San Francisco will be joint hosts with the Exposition in entertaining the visitors. Wednesday afternoon, June 16, the members of the organization will go in a body to the exposition grounds to inspect the varied and complete exhibits of optical goods and oculists' instruments displayed in profusion by large manufacturers. They constitute a liberal education in the profession themselves and have been pronounced the most complete exhibit of the kind to be found in America. The program on that day will include a dinner in the evening with special entertainment features.

The opening session at 10 o'clock Tuesday morning will be presided over by Dr. Hayward G. Thomas, of Oakland, president of the organization. Addresses of welcome will be made by Dr. Harry G. Sherman, president of the California State Medical Society; Dr. Kasper Fischel, chairman of the eye, ear, nose and throat section of the same society; Dr. Harrington B. Graham, chairman of the eye, ear, nose and throat section of the San Francisco County Medical Society, and by Dr. Herbert C. Moffitt, president of the same organization. The annual address of President Thomas will be given at that time.

At the afternoon session, Tuesday, the following papers will be read and discussed: "Some Original Operations Intended to Relieve or Cure Chronic Glaucoma by Capillary Drainage", Dr. Casey A. Wood, Chicago; "Report of Cases Operated by the Elliot Method", Dr. Walter R. Parker, Detroit; "Medical As-

pects of Glaucoma", Dr. Martin Fisher, Cincinnati; "Local Anæsthesia in Surgery of the Iris and Lens", Dr. P. de O'Barrie, San Francisco. Wednesday and Thursday papers will be read by the following: Dr. Harold Clifford, Omaha, subject not announced; "Indications for Operative Interference in Accesory Sinuses of the Nose", Dr. John J. Kyle, Los Angeles; "Eye and Orbital Lesions Secondary to Nasal Affections", Dr. William Ford Blake, San Francisco; "Dyptheria Carriers", Dr. Arthur A. O'Neil, San Francisco; "Ideal Mastoid Operation", Dr. H. O. Reik, Baltimore; "Persistent Hæmorrhage Following a Radical Mastoid Operation, Controlled by Horse Serum", Dr. Franz H. Brandt, Boise; "Report of a Case", Dr. Herbert Cohn, San Francisco; "Tonsils and Adenoids from the Standpoint of the Pediatrist", Dr. Sanford Blum, San Francisco; "Observations on the use of the Tropometer", Dr. Joseph L. McCool, Portland; "Tuberculous Lesions of the Retina and the Retinal Vessels", Dr. Edward Jackson, Denver; "Cataract Operation", Dr. Vard H. Hulen, San Francisco; "The Smith Operation", Dr. Aaron S. Green, San Francisco; "Some Unusual Types of Cataract Operations", Dr. Ralph A. Fenton, Portland; "Pulsating Exopthalmos Treated by Slow Occlusion of the Common Carotid Artery with Neff Clamp", Dr. Stephen D. Brazeau, Spokane.

Friday, June 18, the following experts will hold clinics: Dr. E. D. Shortridge, French Hospital, demonstration of cases and enucleation of tonsils; Dr. Henry Horn, Polyclinic Hospital, bronchoscopy and tonsil operation; Drs. Cohn and Moore, Polyclinic Hospital, tonsil enucleation; Dr. Aaron S. Green, Polyclinic Hospital, the Smith operation; Dr. Vard H. Hulen, City and County Hospital, cataract operations; Dr. Cullen F. Welty, City and County Hospital, mastoid operations. The regular eye, ear and nose clinic will be held at Stanford Medical College from 2 to 4 o'clock p.m., with Dr. E. C. Sewell in charge.

The officers of the Pacific Coast Oto-Ophthalmological Society are as follows:

President: Dr. Hayward G. Thomas, Oakland; First Vice-President, Dr. Walter K. Seelye, Seattle; Second Vice-President, Dr. R. A. Fenton, Portland; Secretary and Treasurer, Dr. Cullen F. Welty, San Francisco. Executive Committee, Dr. J. F. Dickson, Portland; Dr. Clinton T. Cooke, Seattle, and Dr. Hayward G. Thomas, Oakland.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. F. Hardy, M.D.,
St. Louis, Mo.

REMOVAL OF EYES IN THE PRESENCE OF ORBITAL CELLULITIS.

W. T. Lister (*British Med. Jour.*, March 6, 1915) restates the well-known fact that it is somewhat dangerous to remove an eye in the presence of a panophthalmitis, because of the risk of septic meningitis if the optic nerve is divided in the ordinary way. In dealing with eyes which have been penetrated or ruptured by bullets or large foreign bodies, there is usually present more or less orbital cellulitis. In order to prevent infection of the nerve sheath, Lister suggests the following plan: (1) The contents of the globe are thoroughly eviscerated, all traces of retina and choroid being scraped away to avoid any chance of sympathetic ophthalmia. (2) The muscles are divided. (3) The sclerotic is pulled forward and divided far back, leaving only a frill around the intact optic nerve.

The actual procedure may be varied according to the following circumstances: (a) When the opening in the globe is small or has firmly healed, the conjunctiva and muscles are divided first. The cornea is then cut away and the contents of the globe carefully scraped out, either with a large sharp spoon or a scoop made for the purpose, and the process completed by scrubbing out the sclera with a swab held in a pair of forceps. The sclerotic is drawn well forward by two or three pairs of pressure forceps and cut far back, leaving a frill around the nerve. (b) If the globe has an open rent or wound the contents should be scraped out first and the shell of sclerotic and conjunctiva thoroughly washed. The sclerotic is now firmly packed with a strip of gauze to facilitate the division of the muscles, which is next performed. The gauze is then removed, the sclera drawn well forward and divided as before. (c) Where the globe is split open in all directions, packing is impossible. In this case, after scooping and wiping out the contents of the eye, the separate portions of the sclera can be picked up and made taut with forceps and the muscles dissected off as far back as possible. After drawing the bunch of forceps forwards, the sclerotic is now cut through as before. The three points to remember are:

(1) To remove all trace of retina and choroid. (2) To take away the bulk of the sclera; but (3) to leave a frill of sclerotic round the intact optic nerve.

Lister states that danger of meningitis is avoided, there is little bleeding, no shock, drainage for the cellulitis is afforded and the healing process is not prolonged. He says the results are good and suggests that the same procedure might be the safest method of removing eyes with panophthalmitis.

A CASE OF BILATERAL ACUTE SEROUS TENONITIS.

Dr. F. Pincus (*Archiv. of Ophthalmology*, May, 1915) remarks that primary tenonitis is a very unusual disease. Birch-Hirschfeld was able to collect but 40 cases and some of these were doubtful. Pincus reports a case of an apparently genuine acute serous tenonitis. Briefly it is as follows: A young man after indulgence in alcchol rode in an open auto. The next day he showed general malaise, fever, pain in the neck and swollen eyelids. Following day, temperature of 100, swelling and bluish discoloration of the lids of both eyes. No history of gonorrhœa or rheumatism. There was intense chemotic swelling of the conjunctiva (bulbar). The eyes could not be moved and attempts to do so provoked pain. Palpation gave the sensation of the eyes being stuck in a hard mass. Some exophthalmus. The swelling and discoloration of the lids was sharply limited to the tarsal part of the lids and did not extend toward the eyebrows or nose, externally or below.

The lacrimal and salivary glands also showed involvement. Recovery, uneventful, taking place in about five days.

Pincus emphasizes the peculiar limitation of the discoloration of the swelling of the lids to the tarsal portion of the lids. He thinks this of diagnostic importance. Birch-Hirschfeld described the following triad of symptoms in tenonitis based upon the anatomic relationship of Tenon's capsule: (1) moderate exophthalmus; (2) chemosis; (3) restricted motility of the eyeball with pain. Pincus discusses the occurrence of dacryo-adenitis and involvement of the salivary glands with this condition. The dacryo-adenitis was not held to be the primary condition. The simultaneous affection of all the salivary glands speaks against the connection of the dacryo-adenitis with the tenonitis.

Most cases of primary serous tenonitis are supposed to be due to rheumatism or influenza. Three photographs accompany the

article, showing the inability to open the eyes, the swelling of the lids and the characteristic form of the palpebral fissure, and the enormous chemosis apparent with the lids separated.

FAMILY CEREBRAL DEGENERATION WITH MACULAR CHANGES.

F. E. Batten and M. S. Mayou in a rather complete article (*Proceedings of the Royal Soc. of Medicine,* March, 1915), illustrated with eight cuts, describe this interesting and somewhat unusual condition. They summarize their remarks thusly: Shortly, the clinical features in the family described are as follows: Out of a family of five children, born of healthy non-Jewish parents, three were affected with a progressive disease leading to dementia, blindness and paralysis, one of whom showed changes in the macular region of the eyes at a late stage of the disease. The failure of vision occurred before the macular change developed.

The children were healthy at birth, and developed in a normal manner till the age of 3½. Epileptic fits occurred, and they then began to degenerate mentally. They became noisy, dirty in habits, and developed a spastic condition of the limbs. Death ensued in one child at the age of 8, in the second at the age of 4, and in the third at the age of 6.

In two a post-mortem has been performed. In one case no change was visible in the nervous system on macroscopical examination; in the other only slight atrophy, but on microscopical examination diffuse degenerative changes affecting the ganglion cells were visible in the cerebrum, cerebellum, spinal cord and retina similar to those described in the Waren Tay-Sachs disease. The Wassermann reaction of the blood and cerebrospinal fluid was negative in both cases, and no change in the brain or membranes was found suggesting congenital syphilis.

Conclusions.—It is clear from a consideration of the above cases and their pathology that there is a group of cases similar to the Waren Tay-Sachs family amaurotic idiocy, but occurring at a later age and not race selective. The disease is characterized by progressive blindness, progressive paralysis and progressive dementia; but the changes at the macula are not always present, and when present are in some cases a late manifestation of the disease. The later in life the disease appears the less acute

seems to be the course, and in those cases in which the visual defect manifests itself during or after the second decade of life there appears to be little or no liability for the central nervous system to be affected. The parallelism of the clinical symptoms with the Waren Tay-Sachs cases is clear. The agreement lies in (1) the family character; (2) the absence of syphilis; (3) the clinical symptoms and course. The difference lies in (1) the absence of race proclivity; (2) the absence of the characteristic macular change; (3) the difference of age.

What the nature of the poison may be which is so selective in the mode of action and tends to affect several members of a childship is a problem yet to be solved, for neither the exhaustion theory of Ediger nor the abiotrophy theory of Gowers helps to throw light on the condition.

THE PSYCHOLOGY OF TRAUMATIC AMBLYOPIA FOLLOWING THE EXPLOSION OF SHELLS.

J. Herbert Parsons (*Lancet,* April 3, 1915) has contributed an article on the psychology of traumatic amblyopia following the explosion of shells in which he goes rather deep into the psychological aspect of the condition. Parsons does not think these patients are shamming, but that they have suffered "a wound of consciousness." In many of the cases direct injury of such a nature as to cause definite organic lesion in the eye or visual paths could be eliminated. The history of a typical case is as follows: A man, after more or less prolonged fatigue induced by marching and exposure in the trenches, is incapacitated by the explosion of a shell in his immediate vicinity. He may be merely knocked down or thrown into the air, and more or less seriously injured or wounded by concussion, shrapnel bullets or shell splinters. Consciousness is lost for a variable time, but often not so far as to prevent automatic movements, so that the man may walk in a dazed condition to a dressing station. The mental equilibrium at this state is much disturbed, and all memory of this phase is usually lost. The most striking feature of the case is that the man is instantaneously struck blind. The blindness may be associated with deafness, loss of smell or loss of taste, but all of these are less frequent than the blindness. On examination it is found that there is intense blepharospasm and lacrimation. The lids are opened with great difficulty and examination of the eyes is almost impossible. No record of the

condition of the pupils at this stage has been made. In the course of a week or two the blepharospasm diminishes and it becomes possible to examine the fundi. There may be local injury to the eye, but in uncomplicated cases the eyes are found normal. The pupils react to light, though in some cases the reactions are sluggish and sometimes one pupil differs from the other, being larger or more sluggish in its reactions. The fundi appear to be absolutely normal. By this time probably some restoration of sight has occurred. Light is perceived and large objects may be distinguished. As improvement occurs the patient manages to grope about usually with his hands outstretched before him, but it is noteworthy that he does not usually stumble up against objects in his path. As soon as it is possible to take the fields of vision it is found that they are markedly contracted and to a degree which seems inconsistent with the avoidance of obstacles in walking. The recovery is slow, but eventually complete. One eye may recover more slowly than the other. In diagnosis it is necessary to separate these cases from allied conditions due to organic disease or malingering. It is not easy to eliminate organic lesions and still more so to detect malingering. Parsons states that the investigation of the present condition is simply psycho-analysis in the true sense of that much abused term.

THE DIAGNOSIS AND TREATMENT OF SIMPLE GLAUCOMA

A. E. Bulson (*Jour. Indiana State Med. Assn.*, April 15, 1915), while adding nothing new to this much discussed subject, restates some facts and gives his own views on this troublesome condition. Diagnosis here means care and a making of a thorough examination in the absence of striking symptoms. Many of these cases go on to blindness, not through lack of skill but from failure to thoroughly examine. As Bulson points out, early recognition and treatment are of supreme importance. In the medical treatment Bulson prefers eserin in olive oil, as it is less irritating than the aqueous solution. In his judgment miotic treatment should always be the first treatment employed and continued as long as effective. A slowly contracting field and loss of central vision demand a consideration of operative measures. Treatment does not end with miotics or operation, but includes the supervision of the patients' general health as

regards constipation, high blood pressure, diet, use of alcohol, etc. Among operations Bulson prefers the Elliott procedure, using a 2 mm. trephine. He urges a more critical ophthalmoscopic examination and a more general use of the tonometer and perimeter in patients past middle life coming complaining of vague symptoms, which are frequently attributed to a need of change of glasses or to some slight systemic derangement.

OPERATIONS IN THE EYE CLINIC OF STANFORD UNIVERSITY.

In an interesting article, A. B. McKee (*California State Jour. of Medicine,* February, 1915) gives a report of the operative procedures carried out at the Ophthalmological Clinic of Stanford University. The methods have been conservative in character, new methods tried only when dissatisfaction with old methods or the inherent saneness of the newer method rendered a change advisable. It has been customary at Stanford for some years to do a preliminary iridectomy in all cataract cases when not compelled by circumstances to do the iridectomy at the time of extraction. It is argued that if it is a good and safe measure where only one eye is present, it is equally so where both eyes are present. The well known advantages are detailed by McKee. In a comparatively small number of combined extractions the percentage of complications was considerably higher than in those in which a preliminary iridectomy had been done. The usual difficulty with secondary cataract was met with. Homer Smith's operation was therefore tried, but not often enough to warrant any conclusions. McKee and his associates allowed 24 to 48 hours to elapse after the capsulotomy, as against 6 hours advised by Homer Smith, without incurring the danger of rise of tension. The Stanford operators do not take kindly to the intracapsular operation and cannot agree with the sentiment that disregards loss of vitreous. The Elliott operation has been used, and besides its good effects in chronic glaucoma it has been the means of saving painful sightless from enucleation. Thus far there has been no case of infection following the Elliott operation, which McKee thinks may be due to the use of a large thick flap and care in not button-holing it.

The removal of the lacrimal sac is done after the method of Meller, limiting the operation to those cases in whom other and less radical measures have failed. Simple strictures and dacryocystitis are handled by incising the canalicus freely and pass-

ing the knife down through the nasal duct. The method is essentially the same as that pursued in the treatment of urethral strictures. There is apparently less tendency to the recurrence of the stricture after this method than after the repeated irritation occasioned by the passing of probes without incision. Even after the rupture of an abscess, incision of the stricture with gentle probing has resulted in cure, and not infrequently rupture of the sac has been prevented by the internal incision. In no case after removal of the sac was the subsequent epiphora disturbing and in all cases there was complete cessation of the discharge. Extirpation was done under local anæsthesia, using novocain and adrenalin. Regard is not given the tarsal tendon. A firm compress over the sac is essential, being removed, however, for inspection of the cornea.

HEREDITARY ANIRIDIA.

S. D. Risley (*Jour. Am. Med. Assn.*, April 17, 1915) presents a case history of aniridia together with a striking family history of heredity. The patient, aged 27, lost the right eye in childhood from an unknown cause. The vision of the left eye had never been good. Inspection revealed an aphakial eye with entire absence of the iris. There had been a recent and sudden diminution of vision which was explained by a detachment and rupture of the retina. The vitreus was fluid and filled with freely floating shreds of opacity. Inquiry revealed the fact that aniridia was prevalent in the family. The patient's mother had aniridia and he had a son and a daughter both aniridic in both eyes. Four generations were traced. In the first the male progenitor had double aniridia. In the second generation there were four males and nine females all with double aniridia. In the third generation, to which Risley's patient belonged, there were thirty-two males and thirty-one females. In four of these (eight eyes) the condition was not known. The remaining fifty-five eyes had no iris. Of the thirty-one females (sixty-two eyes) all had aniridia. The total number of eyes in the third generation was 117. In the fourth generation there were nineteen males known to have aniridia and two eyes known to have cataract; twenty-three females had forty-four aniridic eyes, the condition of two eyes not being known. A chart showing the four generations accompanies the article. Risley states that he knows of no more striking history than is furnished by this family.